

Pendulum Lab
AP Physics

24 Points Total

The purpose of this lab is to investigate the variables that affect the period of a pendulum. A simple pendulum consists of a bob suspended from a string whose weight is insignificant compared to the bob. When swinging in a plane, the motion of the pendulum is nearly periodic. Several of the bob's parameters can be varied: the mass of the bob, length of the string, and amplitude of the motion. Design an experiment to determine which variable(s) matter for the period of a pendulum.

Instructions:

1. Write a procedure for testing the affects of different variables on the period of a pendulum.
There will be three procedures total: mass of the bob, length of the string, amplitude of the motion.
2. Determine what variables you think will affect the period.
3. Perform the experiments.
4. Record data.
5. Answer questions.

Rubric:

1. Procedure for testing variables (6; 2 points each for the 3 variables).
2. Data tables (6; 2 each for the 3 variables).
3. Which variable(s) affected the period (2 points)?
4. For each variable that affected the period, graph the variable on the x-axis and period on the y-axis. What general function is produced (4 points)?
5. Sources of error and improvements (4; 2 points for each question).
6. Conclusions (2 points). Were you right about what variables you expected? Why or why not?